

**Remarks/Arguments**

**Rejection of Claims 1-4, 6, 8-9, and 11-13 under 35 U.S.C. §103(a)**

The Examiner rejected Claims 1-4, 6, 8-9, and 11-13 under 35 U.S.C. §103(a) as being unpatentable over Robinson et al. (U.S. Patent No. 5,895,857). Applicants respectfully traverse the rejection as follows.

**A. Robinson does not teach producing a single output for a single period of time.**

Robinson does not disclose the Claim 1 element of: “d.) processing said amplified signal with a sample and hold peak detector over a predetermined interval of time to determine peaks of said amplified signal over said predetermined period of time; e.) creating an output signal proportional to said determined peaks of said amplified signal;” Claim 1 recites sampling peaks of the amplified signal over a single time period to produce a single output signal. In contrast, Robinson teaches: “A peak value detector receives the machine vibration signal and samples it *during predetermined sample time periods*. The peak amplitude values of the vibration signal are held during each of the sample time periods to produce *peak vibration amplitudes* which are then output for further processing.” (col. 3, lines 3-5). Contrary to the above-mentioned elements of Claim 1, Robinson teaches sampling peaks over a plurality of time periods to produce a corresponding plurality of outputs. In other words, Claim 1 recites a scalar process (a single value) and Robinson teaches a vector process (a column matrix of values).

**B. Robinson teaches processing a plurality of outputs.**

Claim 1 does not recite further processing of an output signal. In contrast, Robinson teaches that a plurality of outputs is further processed: “A peak value detector receives the machine vibration signal and samples it during predetermined sample time periods. The peak amplitude values of the vibration signal are held during each of the sample time periods to produce peak vibration amplitudes *which are then output for further processing*.” (col. 3, lines 3-5).

Claim 1 further recites: “f.) repeating steps d.) and e.).” That is, the method is repeated to generate another output for another period of time. However, element (f) of Claim 1 does not recite any grouping or processing of outputs. That is, each output is independent. This is very

different from Robinson's teaching of generating a plurality of output signals that are then grouped together for further processing.

C. Robinson teaches away from the present invention as recited in Claim 1.

Robinson teaches an approach substantially opposite of that recited in Claim 1. Rather than producing a single output signal for a single time period, as recited in Claim 1, Robinson teaches producing a plurality of output signals corresponding to a respective plurality of time periods. Rather than producing an output signal without further processing, as recited in Claim 1, Robinson teaches further processing of a plurality of output signals. Thus, Robinson teaches a substantially different approach for identifying stress wave faults.

Applicants respectfully submit that Robinson does not teach all the elements of Claim 1. Since Robinson teaches away from the invention recited in Claim 1, Robinson cannot suggest or motivate the invention recited in Claim 1. Therefore, Claim 1 is patentable over Robinson and reconsideration of the rejection is requested. Claims 2-4 and 6, dependent from Claim 1, also are patentable in light of the cited reference.

The Examiner rejected Claim 8 for the reasons set forth for Claim 1. Therefore, Applicants respectfully submit that Claim 8 is patentable over Robinson and reconsideration of the rejection is requested. Claims 9 and 11-13, dependent from Claim 8, also are patentable in light of the cited reference.

Rejection of Claim 5 under 35 U.S.C. §103(a)

The Examiner rejected Claim 5 under 35 U.S.C. §103(a) as being unpatentable over Robinson et al. (U.S. Patent No. 5,895,857) in view of Krent et al. (U.S. Patent 4,776,590). Applicants respectfully traverse the rejection as follows.

A. The references cited by the Examiner do not teach or suggest all the claim limitations recited in amended Claim 1.

As shown *supra*, the invention recited in Claim 1 is patentable over Robinson. Krent fails to cure the defects of Robinson with respect to Claim 1. Krent teaches dampening vibration in a sports racket and fails to teach or suggest the Claim 1 element of: "processing said amplified signal with a sample and hold peak detector over a predetermined interval of time to

determine peaks of said amplified signal over said predetermined period of time; creating an output signal proportional to said determined peaks of said amplified signal;”

B. The references cited by the Examiner do not teach, suggest, or motivate the modification of the references to create the present invention as recited in Claim 1.

As shown *supra*, Robinson cannot teach, suggest, or motivate the modification of the references to create the present invention as recited in Claim 1. Krent is solving a problem unrelated to the present invention, namely, dampening vibration in a sports racket. Krent does not teach, suggest, or motivate identifying stress wave vibration. Thus, Krent does not teach, motivate, or suggest the modification of Robinson or Krent to create the invention recited in Claim 1.

Applicants respectfully submit that Claim 1 is patentable over Robinson in view of Krent.

Rejection of Claims 7 and 10 under 35 U.S.C. §103(a)

The Examiner rejected Claims 7 and 10 under 35 U.S.C. §103(a) as being unpatentable over Robinson et al. (U.S. Patent No. 5,895,857) in view of Bseisu (U.S. Patent 4,992,997). Applicants respectfully traverse the rejection as follows.

A. The references cited by the Examiner do not teach or suggest all the claim limitations recited in amended Claim 1.

As shown *supra*, the invention recited in Claim 1 is patentable over Robinson. Bseisu fails to cure the defects of Robinson with respect to Claim 1. Bseisu teaches using a strain gauge to sense vibration associated with a wellbore and fails to teach or suggest the Claim 1 element of: “processing said amplified signal with a sample and hold peak detector over a predetermined interval of time to determine peaks of said amplified signal over said predetermined period of time; creating an output signal proportional to said determined peaks of said amplified signal;”

B. The references cited by the Examiner do not teach, suggest, or motivate the modification of the references to create the present invention as recited in Claim 1.

As shown *supra*, Robinson cannot teach, suggest, or motivate the modification of the references to create the present invention as recited in Claim 1. Bseisu is solving a problem unrelated to the present invention, namely, using a strain gauge to sense vibration associated with

a wellbore. Bseisu does not teach, suggest, or motivate identifying stress wave vibration. Thus, Bseisu does not teach, motivate, or suggest the modification of Robinson or Bseisu to create the invention recited in Claim 1.

Applicants respectfully submit that Claim 1 is patentable over Robinson in view of Bseisu. Therefore, Claim 7, dependent from Claim 1, also is patentable in light of the cited references.

C. Claim 8 is patentable over Robinson in view of Bseisu.

As noted *supra*, Claim 8 is patentable over Robinson. Applicants respectfully submit that the same arguments regarding the patentability of Claim 1 over Robinson in view of Bseisu are applicable to Claim 8. Therefore, Claim 8 is patentable over Robinson in view of Bseisu. Claim 10, dependent from Claim 8, also is patentable in light of the cited references.

**Conclusion**

Applicants respectfully submit that all pending claims are now in condition for allowance, which action is courteously requested.

Respectfully submitted,



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